1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 5x > 6x \text{ or } -3 + 6x < 9x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-12, -6]$ and $b \in [-6, 0]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [0, 3.75]$ and $b \in [3.75, 15.75]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9.75, -3.75]$ and $b \in [-8.25, 2.25]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [0, 3]$ and $b \in [5.25, 13.5]$

E. $(-\infty, \infty)$

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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{7}{5} - \frac{7}{8}x \geq \frac{3}{3}x - \frac{6}{2}$$

A. $[a, \infty)$, where $a \in [-0.75, 3]$

B. $[a, \infty)$, where $a \in [-6.75, 0]$

C. $(-\infty, a]$, where $a \in [0.75, 6]$

D. $(-\infty, a]$, where $a \in [-3, 1.5]$

E. None of the above.

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3. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No less than 10 units from the number 9.

A. $(-\infty, -1) \cup (19, \infty)$

B. $(-\infty, -1] \cup [19, \infty)$

C. $[-1, 19]$

D. $(-1, 19)$

E. None of the above

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 - 6x < \frac{-32x + 8}{6} \leq -3 - 7x$$

A. $(a, b]$, where $a \in [3.75, 9.75]$ and $b \in [-2.25, 4.5]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [6.75, 9.75]$ and $b \in [-1.5, 6]$

C. $[a, b)$, where $a \in [5.25, 12.75]$ and $b \in [0, 6.75]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [7.5, 11.25]$ and $b \in [0.75, 4.5]$

E. None of the above.

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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 4x > 5x \text{ or } 5 + 6x < 8x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.02, -3.97]$ and $b \in [1.73, 2.55]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.52, -1.57]$ and $b \in [3.89, 4.51]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.85, -1.88]$ and $b \in [3, 6]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.65, -3.3]$ and $b \in [0, 3]$

E. $(-\infty, \infty)$

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5x + 4 < -4x + 10$$

A. (a, ∞), where $a \in [-15, -3]$

B. $(-\infty, a)$, where $a \in [-7, -4]$

C. $(-\infty, a)$, where $a \in [6, 8]$

D. (a, ∞), where $a \in [2, 11]$

E. None of the above.

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$4x - 5 > 10x - 8$$

A. $(-\infty, a)$, where $a \in [-0.58, -0.47]$

B. $(-\infty, a)$, where $a \in [-0.23, 0.73]$

C. (a, ∞), where $a \in [0.25, 1.38]$

D. (a, ∞), where $a \in [-1.27, -0.08]$

E. None of the above.

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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 6x < \frac{77x - 8}{9} \leq 7 + 8x$$

A. $[a, b)$, where $a \in [-6.75, 0.75]$ and $b \in [8.25, 18]$

B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-5.25, 0]$ and $b \in [12, 19.5]$

C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-4.27, 0.82]$ and $b \in [13.5, 15]$

D. $(a, b]$, where $a \in [-4.5, -0.75]$ and $b \in [9, 15]$

E. None of the above.

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9. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No more than 10 units from the number 6.

A. $[-4, 16]$

B. $(-\infty, -4] \cup [16, \infty)$

C. $(-\infty, -4) \cup (16, \infty)$

D. $(-4, 16)$

E. None of the above

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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-5}{2} - \frac{6}{7}x > \frac{6}{3}x + \frac{8}{9}$$

A. (a, ∞), where $a \in [-2.02, -1.12]$

B. (a, ∞), where $a \in [-0.15, 2.1]$

C. $(-\infty, a)$, where $a \in [0.45, 3.52]$

D. $(-\infty, a)$, where $a \in [-1.5, -0.15]$

E. None of the above.
